BSAFE

INCIDENT CASE STUDY

No.20 | AUGUST 2023

MOORING INCIDENT LEADS TO FATALITY

A CREW MEMBER SUFFERED A FATAL HEAD INJURY ON BOARD A 20,236GT GENERAL CARGO VESSEL WHICH WAS IN THE PROCESS OF LOADING GRAIN WHILE MOORED ALONGSIDE ANOTHER BULK CARRIER. THE CREW MEMBER WAS UNEXPECTEDLY STRUCK BY A TENSIONED MOORING LINE WHICH WAS BEING USED TO PULL THE VESSEL FORWARD DURING A WARPING OPERATION, BUT UNFORTUNATELY SPRANG LOOSE FROM THE FAIRLEAD, RESULTING IN THE TRAGIC ACCIDENT.

FIGURE 1 VESSEL
SOURCE FLEETMON

WHAT HAPPENED

The incident occurred between two bulk carriers, while anchored. Vessel A arrived at the anchorage to load grain from another anchored bulk carrier (vessel B). A pilot boarded vessel A and the vessels were moored together for the cargo transfer. The mooring arrangement consisted of various lines belonging to vessel A.

During the loading process, Vessel B's crew realised that Vessel A needed to be moved forward to accommodate the crane grab. At this point there was approximately an eight-metre difference in freeboard between the two vessels. Vessel B's third officer contacted Vessel A's master via VHF radio, requesting the vessel to be moved forward by two to three metres. Vessel A's master instructed the crew to proceed with the warping operation using spring lines. The master decided not to wake the off-watch crew to assist to allow them to rest. However, he acknowledged the tiredness of the Chief Officer (C/O).

The warping operation began at 2234 with crew members positioned on the forward and aft mooring decks. The C/O and an able-bodied seafarer (AB) were on the aft mooring deck, preparing to heave the aft spring. As the forward springs were slackened, the AB started hauling the aft spring, intending to move Vessel A forward. However, as the mooring line came under tension, it unexpectedly sprang out of its shipside open roller fairlead, striking the C/O's head and causing him to lose consciousness.

The AB immediately notified the master via VHF radio about the C/O's injury. The master instructed the crew to provide first aid and called for medical assistance from Vessel B, local VTS, the agent and the nearest Maritime Rescue Coordination

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WHAT HAPPENED (CONTINUED)

Centre (MRCC). The C/O was unresponsive but was still breathing and a pulse was observed. The second officer administered first aid, including oxygen, and used a portable defibrillator.

The agent informed the master at 2255 that a local tug would evacuate the C/O ashore. The tug arrived at 2316 and the crew informed Vessel A's master that they were awaiting permission from the local port authority before taking the C/O on board. The agent was also trying to organise the C/O's evacuation by helicopter. The helicopter evacuation was ultimately not possible due to no helicopters being available and the C/O was transferred to the tug. The tug proceeded to port where a paramedic assessed the C/O's condition and confirmed he had passed away. A postmortem examination later revealed closed blunt force trauma to the head resulting in traumatic brain swelling and a brain haemorrhage as the cause of death.

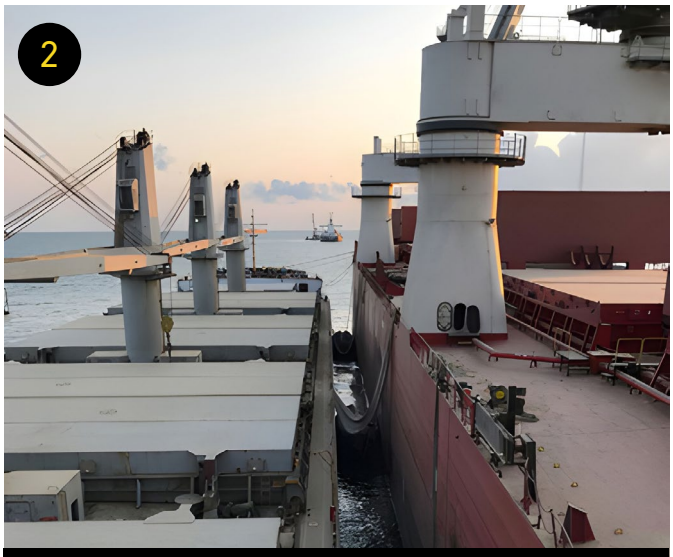

FIGURE 2 VESSEL A ON THE LEFT MOORED ALONGSIDE VESSEL B
SOURCE MAIB REPORT 9/2022

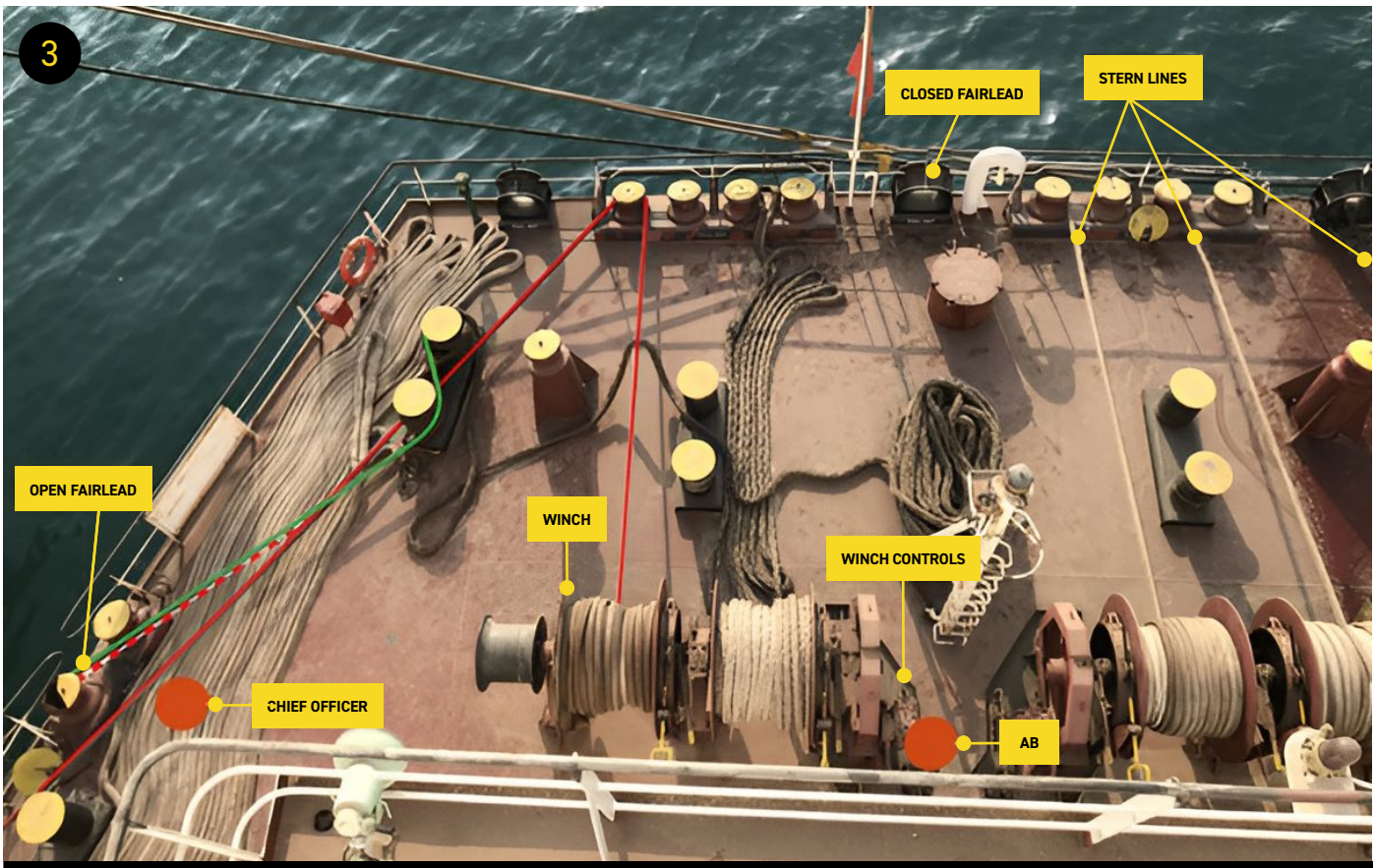

FIGURE 3 VESSEL A's AFT MOORING ARRANGEMENT
SOURCE MAIB REPORT 9/2022

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BRITANNIA COMMENTARY ON INCIDENT

THE FOLLOWING COMMENTARY IS PART OF THE CASE STUDY MATERIAL AND HAS BEEN PREPARED TO CONSIDER SOME OF THE KEY ISSUES. THIS WILL SUPPORT REFLECTIVE LEARNING AND ENABLE DISCUSSION OF SOME OF THE CONTRIBUTORY FACTORS AND LESSONS LEARNED WITH PARTICULAR REFERENCE TO BEST PRACTICES.

PERSONAL INJURIES THAT OCCUR DURING MOORING OPERATIONS ARE NOT UNCOMMON AND CAN PROVE FATAL. IF THESE OPERATIONS ARE NOT PROPERLY PLANNED AND FATIGUED OR INSUFFICIENT CREW ARE INVOLVED, THEN THE LIKELIHOOD OF A MOORING RELATED INCIDENT INCREASES CONSIDERABLY.

THE INVESTIGATION AND RESULTING CASE STUDY IDENTIFIED A NUMBER OF CONTRIBUTORY FACTORS AND LESSONS LEARNED AS DISCUSSED BELOW.

MOORING PROCEDURES

The company's Safety Management System (SMS) highlighted the hazardous nature of mooring operations and no issues were highlighted in the report relating to the quality of the mooring procedures. The decision to prioritise resting the crew and exclude the full mooring team from the operation was a deviation from established protocols and played a key part in the incident. By failing to treat the warping as a mooring procedure, safety was compromised as the C/O had to assume multiple roles resulting in the aft deck being inadequately supervised. The report also implies that there may have been commercial pressures at play. With loading nearly completed, the master may have felt rushed to complete the warping operation as soon as possible. The impact of time pressures on mooring operations has been examined by an International Group animation covering mooring operation safety.

Despite the master deeming that it was not a mooring operation, and therefore out of scope for mooring operations within the vessel's SMS, there was no risk assessment or toolbox talk. A task specific risk assessment is required when undertaking hazardous tasks on board and they become even more important when an unfamiliar task is being conducted by the crew, as was the case with the STS mooring. As a result of this mooring arrangement, an upward lead of the mooring lines developed due to the freeboard differences. The fairlead in use was also open, further adding to the risk. This was an unexpected hazard unfamiliar to the crew. If the operation had been properly planned and risk assessed, the hazard may well have been identified. Furthermore, if it had been highlighted in a toolbox talk prior to the warping operation, along with the need for the mooring configuration to be correctly positioned, this incident may well have been avoided.

SITUATIONAL AWARENESS

Situational awareness is crucial in preventing accidents and ensuring the safety of crew members. In this case the C/O's tiredness may have influenced his decision-making and led him to complete the job too quickly. This compromised his situational awareness, as he failed to recognise the hazards posed by standing next to the tensioned aft spring during the warping operation. This occurred despite the seafaring experience of the C/O and his familiarity with the hazards associated with mooring operations.

When tired or rushing the ability to process a substantial amount of information diminishes significantly and this can result in crucial information being overlooked or inaccurately assessed, ultimately leading to a loss of situational awareness. As every person has limitations for gathering and interpreting information, it is essential to carefully consider the number of crew required for specific tasks.

MANPOWER ALLOCATION

Proper allocation of crew members and adherence to established protocols are critical for safe operations. In this case the decision to assign only the C/O and one AB for the warping operation, instead of a full mooring team, compromised safety. The master's reasoning behind this decision was to rest the crew with the short distance to be moved being taken into

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BRITANNIA COMMENTARY ON INCIDENT (CONTINUED)

consideration. However, this allocation did not provide adequate supervision or support for the C/O, who had to oversee both the aft deck and the overall operation.

EMERGENCY PREPAREDNESS

Although the master of Vessel A was in direct communication with the agent, the local traffic channel, Vessel B, the local port and the local Maritime Rescue Coordination Centre (MRCC), there was a lack of coordination among these different agencies. Consequently, there was no central control over the emergency response. This lack of coordination and confusion regarding the evacuation process and port permissions caused a delay of approximately 25 minutes in evacuating the C/O. This lack of coordination resulted in avoidable delays that may have reduced the C/O's chances of survival.

Effective communication and coordination are essential during emergency situations. Crew members need to communicate vital information, such as the nature and severity of the injury, to emergency responders or medical professionals on shore. Training helps crews develop clear communication channels, standardised procedures and effective teamwork, enabling smooth coordination and ensuring that the necessary help and resources are mobilised promptly.

Emergency preparedness and on-board training play a vital role in mitigating risks, enhancing safety, and protecting lives when dealing with life-threatening injuries or other emergencies on board vessels.

Britannia hosted a webinar discussing the different aspects that need to be addressed following a marine incident. A recording of this webinar, as well as the presentation slides, can be found on Britannia's website.

CONTACT

For more information on this incident email lossprevention@tindallriley.com

THIS CASE STUDY IS DRAWN FROM THE INVESTIGATION REPORT PUBLISHED BY UK MARINE ACCIDENT INVESTIGATION BRANCH (MAIB).
https://assets.publishing.service.gov.uk/media/62c57741d3bf7f2ffcafae0f/2022-9-TealBay-Report.pdf

REFLECTIVE LEARNING MATERIAL ON NEXT PAGE

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REFLECTIVE LEARNING MATERIAL - MOORING INCIDENT LEADS TO FATALITY

THE QUESTIONS BELOW WILL HELP YOU TO REVIEW THE INCIDENT CASE STUDY EITHER INDIVIDUALLY OR IN SMALL GROUPS. IF POSSIBLE, DISCUSS YOUR CONCLUSIONS WITH OTHERS, AS THIS IS AN EFFECTIVE WAY OF THINKING ABOUT THE ISSUES IN MORE DEPTH.

PLEASE USE THE INFORMATION PROVIDED IN THE CASE STUDY TOGETHER WITH YOUR OWN EXPERIENCES AND THOUGHTS, TO REFLECT ON THE INCIDENT AND HOW THE ISSUES IDENTIFIED MIGHT RELATE TO YOUR OWN SITUATION.

WHAT DO YOU BELIEVE WAS THE IMMEDIATE CAUSE OF THE INCIDENT?

WHAT OTHER FACTORS DO YOU THINK CONTRIBUTED TO THE INCIDENT?

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WHAT DO YOU BELIEVE WERE THE BARRIERS THAT SHOULD HAVE PREVENTED THIS INCIDENT FROM OCCURRING?

WHY DO YOU THINK THESE BARRIERS MIGHT NOT HAVE BEEN EFFECTIVE ON THIS OCCASION?

WHAT IS YOUR COMPANY POLICY FOR MOORING, INCLUDING MINIMUM NUMBERS AND STS MOORING OPERATIONS?

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WHAT STRATEGIES CAN BE IMPLEMENTED TO MAINTAIN SITUATIONAL AWARENESS EVEN IN DEMANDING SITUATIONS?

HOW OFTEN ARE EMERGENCY SCENARIOS DRILLED, INCLUDING THE EVACAUTION OF INJURED PERSONNEL?

HOW DOES EFFECTIVE TRAINING AND EMERGENCY PREPAREDNESS CONTRIBUTE TO MITIGATING RISKS AND ENSURING PROMPT RESPONSE DURING LIFE-THREATENING SITUATIONS?

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